REMARKS

Claims 1-3, 5-21, and 25-33 are pending in the instant application. In the Office Action dated July 18, 2008, claims 1-3, 5-15, 17-21, and 25-33 stand rejected as being obvious over Speer (US 5,211,875) in view of Collette (US 5,759,653); claims 1-3, 5-15, 17-21, and 25-30 stand rejected as being obvious over Collette; and claims 31-33 stand rejected as being obvious over Nilsson (U.S. 5,759,653) in view of Collette.

Page 1 of the Office Action indicates that claim 16 stands rejected. Claim 16, however, is not specifically addressed in any of the rejections. Applicants request clarification on the status of claim 16.

I. Speer in view of Collette

Claims 1-3, 5-15, 17-21, and 25-33 stand rejected under 35 U.S.C. 103(a) as being obvious over Speer (U.S. 5,211,875) in view of Collette (U.S. 5,759,563).

A. Independent Claim 1

Independent claim 1 recites a method for forming a container that is stable during unfilled storage and has a barrier layer with an oxygen scavenging property that is activated after filling the container with an aqueous fluid. In contrast, the primary Speer reference teaches a method of initiating oxygen scavenging by exposing a composition to radiation. The scavenger layer of the Speer container includes an oxidation catalyst, an oxygen-scavenging polymer (preferably an ethylenically unsaturated polymer), preferably a photoiniator, and optionally a diluent polymer. The Speer container is exposed to radiation to initiate oxygen scavenging prior to, during, or after product packaging.[1] As acknowledged in the Office Action, Speer does not disclose the steps of forming a preblend of the instant claims and subsequently combining the preblend with a base polyester. To overcome this deficiency, the Office Action looks to Collette and asserts it would have been "obvious to apply the masterbatch process of Collette to the Speer process in order to provide improved dispersion of scavenging material in the polyester packaging material."[2]

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[1] See Speer at col. 9, lines 9-11.
[2] See pages 3-4 of the Office Action.

At page 2, the Office Action asserts that "[t]he plastic container formed by the Speer process would be stable during unfilled storage since it is activated by radiation (9:8), and the barrier layer would have an oxygen scavenging property that is activated after filling the container with a product in view of the fact that Speer teaches that activation can be performed after packaging (9:7-11)." Thus, the Office Action is asserting an inherency obviousness rejection.

Assuming *arguendo* that a skilled artisan would be motivated to make the proposed combination, it is the Patent Office's burden to show that the container resulting from the modified Speer process would exhibit the properties of clause (f) recited in claim 1.[3] As stated in the heading of MPEP 2112(III), an inherency rejection under 35 U.S.C. 103 can only be made when a prior art product "seems to be identical" and "the prior art is silent as to an inherent characteristic."[4] Inherency may not be established by probabilities or possibilities.[5] The mere fact that a certain thing may result from a given set of circumstances is not sufficient.[6] Rather, "[i]n relying upon the theory of inherency, the examiner must provide a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic necessarily flows from the teachings of the applied prior art."[7]

It is respectfully submitted that the inherency rejection over Speer in view of Collette has no basis. Notably, neither Speer nor Collette discloses a plastic container having (i) a barrier layer as recited in claim 1 and (ii) the container properties of clause (f). Rather, as described below, each reference in fact makes clear that the alleged inherent properties (i.e., the properties of clause (f)) are in fact absent from the relevant containers disclosed therein.

Turning first to the Speer reference, contrary to the assertions of the Office Action, Speer does not disclose a polyamide-containing barrier layer that is stable during unfilled storage and is not activated prior to product filling. Speer focuses primarily on compositions including ethylenically-unsaturated scavengers (e.g., polybutadiene), which are irrelevant

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[3] Applicants do not concede that a skilled artisan would be motivated to make the proposed combination of Speer in view of Collette.
[4] Emphasis added by Applicants.
[5] See MPEP 2112(IV).
[6] *Ibid.*
[7] *Ibid.*, citing *Ex parte Levy*, 17 USPQ2d 1461, 1464 (Bd. Pat. App. & Inter. 1990) (emphasis in original).

embodiments. The only polyamide-containing barrier layer described in Speer is that of Example 10, which is not storage stable. This is demonstrated by the data table in Example 10, which includes oxygen-scavenging data for both a non-irradiated film (Formula 1) and an irradiated film (Formula 2), each of which were placed in a sealed barrier bag filled with atmospheric air. Over the 63 day test period, the bag containing the non-irradiated film showed a reduction in oxygen concentration from 20.6% to 11.7%. Thus, the barrier layer was activated in the absence of either irradiation or exposure to an aqueous fluid.

Likewise, as already discussed extensively on the record, the barrier layer of the Collette plastic container produced by the masterbatch process is also activated prior to product filling. Appendix "A" lists passages in Collette that demonstrate its activation prior filling, and Appendix "B" rebuts those sections of Collette cited in the Office Action.

In view of the foregoing, the Patent Office has not established that a container produced by the proposed combined process must necessarily possess the properties of clause (f).[8] Rather than being silent with respect to the alleged inherent properties, each reference in fact makes clear that the polyamide-containing barrier layer described therein is activated prior to product filling. The Office Action provides no explanation as to why the combined process of Speer in view of Collette must necessarily produce a different result (i.e., a polyamide-containing barrier layer that is not activated until product filling) than either process alone.

It is therefore respectfully submitted that independent claim 1 and dependent claims 2, 3, 5-16, 17-21, 25, 26, 29, 30, and 33 are allowable over Speer and Collette.

B. Independent Claim 27

Independent claim 27 recites a method for producing a plastic container having a barrier layer that is formed from an admixture that consists essentially of a virgin bottle grade polyester and a preblend of a diluent polyester, a polyamide material, and an oxygen scavenging material.

[8] Applicants do not concede that a skilled artisan would be motivated to make the proposed combination of Speer in view of Collette.

Claim 27 stands rejected as being obvious over Speer in view of Collette. As acknowledged in the Office Action, Speer does not disclose forming a barrier layer from an admixture of the polyamide-containing preblend of claim 27 mixed with a base polyester. To overcome this deficiency, the Office Action looks to Collette, which discloses mixing a preblend with a base polymer including an amount of post-consumer PET (PC-PET) effective to accelerate activation of the oxygen scavenger (i.e., at least on the order of 50% PC-PET, and more specifically on the order of 90-100% PC-PET[9]). The Office Action asserts that a skilled artisan would have been motivated to use the Collette masterbatch process in order to achieve "improved dispersion of the scavenging material in the polyester packaging material."[10]

As discussed above for claim 1, each of the Speer and Collette references disclose plastic containers having polyamide-containing barrier layers that are activated before product filling. Neither reference discloses any method for forming a container having a polyamide-containing barrier layer that is activated after filling. The Office Action provides no explanation as to why the proposed combined process of Speer in view of Collette would necessarily produce a different result (i.e., a plastic container possessing the features of clause (f)) than either process alone. Thus, for the same reasons as claim 1, claim 27 is not inherently obvious over Speer in view of Collette.

Moreover, neither Speer nor Collette disclose a plastic container having a barrier layer formed from an admixture consisting essentially of virgin bottle grade polyester and the instantly claimed preblend. Rather, the Collette reference emphasizes the importance of including a substantial amount of post-consumer PET (PC-PET) to achieve accelerated activation prior to product filling. Thus, the inclusion of PC-PET in an amount pursuant to the teachings of Collette would be expected to materially affect activation of the barrier layer and is outside the scope of claim 27.

Nonetheless, at the bottom of page 7, the Office Action offers four arguments, (a)-(d), in support of the assertion that it would have been obvious to substitute virgin PET for PC-PET. The Office Action further asserts at page 22 that "there is no disclosure or evidence that

[9] See the Paragraph 2 of the Collette Summary.
[10] See page 8 of the Office Action.

the materials (PET vs. PC-PET) are structurally or compositionally different." Each of these arguments ignores the specific teachings of Collette regarding the importance of including PC-PET and in so doing constitutes impermissible hindsight bias. Again, the Collette reference itself draws a clear distinction between virgin PET and PC-PET. In its prosecution history, Collette even states that "PC-PET material surprisingly acts to accelerate activation of . . . an oxygen scavenger. Surprisingly, Virgin PET, also a non-scavenging material, does not achieve the same acceleration effect."[11] Thus, based on the teaching of Collette, the inclusion of PC-PET in an amount pursuant to the teachings of Collette would be expected to materially affect activation of the barrier layer.

It is therefore submitted that independent claim 27 and dependent claim 28 are in condition for allowance over Speer.

C. Independent Claim 31

Independent claim 31 also stands rejected as being obvious over Speer in view of Collette. Applicants respectfully traverse this rejection.

Neither Speer nor Collette discloses a monolayer polyamide-containing plastic container that is stable during unfilled storage and has an oxygen scavenging property that is activated when the container is filled with an aqueous fluid. For the same reasons discussed above for claim 1, an inherency obviousness rejection of claim 31 over the cited references has no basis.

Moreover, Collette teaches against monolayer constructions due to the purposeful inclusion of large amounts of post-consumer PET ("PC-PET") in the Collette scavenger layer in order to achieve accelerated activation. Collette explicitly teaches that a multilayer design should be employed to protect food products from contacting contaminants or scavenging materials and byproducts present in the core scavenging layer.[12]

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[11] See the After-Final Request For Consideration dated October 28, 1997, emphasis in original.

[12] See, e.g., Summary at paragraph 3, sentences 1 and 3; and Summary at paragraph 4, sentence 1; col. 8, lines 26-28; col. 9, lines 37-38; col. 9, lines 49-50; col. 10, lines 20-22; and claim 1.

II. Collette

Claims 1-3, 5-15, 17-21, 25-30 stand rejected under 35 U.S.C. 103 as being obvious over Collette.

A. Independent Claim 1

Independent claim 1 stands rejected as being obvious over Collette. The Office Action persists in asserting the following arguments:

(i) Because the Collette method includes the step of mixing a preblend with a base polyester, the Collette plastic container is storage stable and activated after product filling.

(ii) Even if Collette is activated before filling, "one would have found it obvious to rearrange the order of filling and activation."

(1.) Inherency

With regards to Argument (i) above, the Office Action argues that Collette both explicitly and inherently discloses a plastic container that is storage stable in an unfilled state and activated after product filling. In its arguments asserting explicit disclosure, the Office Action persists in mischaracterizing various passages of Collette as disclosing activation after product filling. These passages will not be addressed individually herein since Applicants have already introduced the proper interpretations of these passages into the record.[13] Again, there is no disclosure in Collette of any plastic container that is not already activated prior to product filling.

The Office Action's inherency arguments are addressed at length in item 6 starting on page 18. In particular, the Office Action states the following at pages 19-20:

> "Once a reference teaching a product appearing to be substantially identical is made the basis of rejection, and the Examiner presents evidence or reasoning tending to show inherency, the burden shifts to the Applicant to show an unobvious difference. . . . In this case, Applicants' remarks do not address the technical basis of the rejection, but merely focus on an asserted difference in the result. However, as demonstrated above, the similar use of the preblend process and substantially the same constituents suggests that additional evidence may be required to show how Applicants' process is distinguishable from that of Collette."

[13] A rebuttal of these passages is provided in Appendix B.

Contrary to the assertions of the Office Action, the Collette container and the container of claim 1 are not substantially identical. The Collette reference itself makes clear that the Collette container is activated prior to product filling and does not possess the properties recited in clause (f). As such, an inherency rejection over Collette has no basis. The MPEP permits an inherency rejection under 35 U.S.C. 102/103 only when "the prior art product seems to be identical" and "the prior art is silent as to an inherent characteristic."[14] The Collette reference, however, is not silent as to the inherent properties, but rather it makes clear that the Collette container does not possess the inherent properties. Thus, the Collette reference is not available for use in an inherency rejection.

As touched on in the above block quotation, Item 6 of the Office Action focuses on perceived similarities between the individual process steps of the instant claims and those of Collette and implies that Applicants must explain why the containers of Collette and the instant invention possess different properties. The case law is clear that Applicants' are not required to explain the scientific principles underlying the instant invention.[15] The instant application provides detailed worked examples sufficient to enable a person of ordinary skill in the art to produce a plastic container that is storage stable in an unfilled state and has a barrier layer that is activated after product filling.

Applicants also have no burden to explain why the Collette barrier layer is activated prior to filling. Applicants can only speculate as to why the Collette container is activated prior to filling. The fact that the Collette container is explicitly said to be activated prior to filling could be attributable to any number of variables including, for example, the presence of an undisclosed or unknown material.

(2.) Rearrangement of Process Steps

Turning to argument (ii) above, the Office Action at page 11 asserts that "[i]f it is ultimately determined that Collette activates before filling, this limitation is drawn merely to a

[14] See the heading of MPEP 2112(III), emphasis added by Applicants.

[15] See, e.g., *Philip Morris, Inc. v. Brown & Williamson Tobacco Corp.*, 641 F. Supp. 1438, 1475, 231 USPQ 321, 354 (M.D. Ga 1986), *supplemental opinion*, 645 F. Supp. 174, 1 USPQ2d 1567 (M.D. Ga. 1986) ("There is a long line of precedent holding that an inventor need not understand the principle of his invention as long as it works.") or *Newman v. Quigg*, 877 f.2d 1575, 1581, 11 USPQ2d 1340, 1345 (Fed. Cir. 1989) (noting that "it is not a requirement of patentability that an inventor correctly set forth, or even know, how or why the invention works").

rearrangement of process steps disclosed by the prior art, and in view of Collete's teaching of methods in which the catalysts are activated, one would have found it obvious to rearrange the order of filling and activation." Applicants traverse this assertion for the reasons that follow.

As discussed in Applicants' previous communication, Collette teaches a container made from a material that is not storage stable and is inherently activated prior to filling. Thus, claim 1 is not merely a rearrangement of the process steps of Collette.

In addition, the Office Action's assertion that a container having the properties of clause (f) may be produced merely by rearranging the steps of filling and activation ignores the technical considerations associated with activating an oxygen-scavenger of a barrier layer. As previously discussed, it is unclear precisely what factor(s) are responsible for activation of the Collette barrier layer prior to product filling. No explanation has been offered as to how a skilled artisan would have modified the Collette method to successfully produce a storage stable container having a barrier layer activated only after filling, let alone why a skilled artisan would have been motivated to make any such modifications in the first place.

B. Independent Claim 27

Independent claim 27 stands rejected as being obvious over Collette. The Office Action acknowledges that "Collette does not teach (a) the admixture consists essentially of the preblend and virgin bottle grade polyester, or (b) the permeability change achieved by filling with water." The Office Action, however, asserts that these aspects would have been *prima facie* obvious because virgin PET and PC-PET are substantially the same and, therefore, the plastic container of Collette would inherently possess the properties recited in clause (f).

It is irrelevant whether Collette teaches an admixture as recited in claim 27 since Collette teaches activation of the barrier layer before filling and does not disclose any method for forming a container having a barrier layer with an oxygen-scavenging property that is activated after filling. Because the Collette container is activated before filling, it would not exhibit the features of clause (f).

Moreover, as previously discussed, contrary to the assertions of the Office Action, the Collette reference itself states that virgin PET and PC-PET are not substantially the same and that PC-PET should be included in the barrier layer in amount effective to accelerate activation of the oxygen-scavenger. Again, the prosecution history of Collette explicitly

states that "PC-PET material surprisingly acts to accelerate activation of . . . an oxygen scavenger. Surprisingly, Virgin PET, also a non-scavenging material, does not achieve the same acceleration effect."[16] Based on these teachings, inclusion of PC-PET in an amount pursuant to the teachings of Collette would thus be expected to materially affect activation of the barrier layer and, as such, materially affect a basic and novel characteristic of the invention recited in claim 27.

It is therefore submitted that independent claim 27 and dependent claim 28 is in condition for allowance over Speer.

III. Nilsson in View of Collette

Claims 31-33 stand rejected under 35 U.S.C. 103(a) as being obvious over Nilsson (U.S. 5,034,252) in view of Collette. The Office Action asserts that Nilsson discloses all of the features of independent claim 31, but is silent to the preblend process of step (a) and mixing the preblend with the base polyester. To overcome this deficiency, the Office Action at page 16 persists in asserting that it would have been obvious to incorporate the method of Collette into that of Nilsson to achieve improved mixing of the constituent materials. Applicants respectfully traverse this assertion.

Again, neither Nilsson nor Collette teach a method for making a container having a barrier layer with an oxygen-scavenging property that is activated after filling. Therefore, even if the proposed combination of Nilsson in view of Collette were to be made, the resulting monolayer container would still be activated before filling.

Moreover, in order to make such a combination, a skilled artisan would need to ignore each of the following teachings from Nilsson and Collette:

(i) Nilsson teaches that highly improved oxygen barrier properties can be achieved if the material in the Nilsson preform or container is allowed to undergo an aging process prior to container filling.[17]

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[16] See the After-Final Request For Consideration dated October 28, 1997, emphasis in original.
[17] See, e.g., Nilsson at col. 3, lines 14-23 and col. 6, lines 12-19.

(ii) Collette teaches to include an amount of PC-PET in the scavenging layer sufficient to achieve accelerated activation of the scavenging layer prior to container filling.

(iii) Collette further teaches to position an inner layer between the core scavenging layer and the filled product to protect the filled product from contact with the oxygen scavengers, its byproducts, or PC-PET contaminants.

Applicants submit that a skilled artisan would not be motivated to ignore each of these fundamental teachings. It is respectfully submitted that to conclude otherwise is to exercise impermissible hindsight.

Thus, Applicants respectfully submit that claims 31 and 32 (which depend from claim 31) are in condition for allowance.

CONCLUSION

In view of the foregoing, all of pending claims 1-3, 5-21, and 25-33 are in condition for allowance. Reconsideration and prompt allowance of all pending claims is respectfully requested. The Commissioner is authorized to charge any additional fees associated with this paper or credit any overpayment to Deposit Account No. 50-2070.

Respectfully submitted,

VALSPAR SOURCING, INC.

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By: _____

Andrew A. DeMaster, Reg. No. 57326
1101 South Third Street
Minneapolis, MN 55415
Telephone: (612) 851-7281
Fax: (612) 375-7313

APPENDIX "A"

The following citations are representative portions of US 5,759,653 ("Collette") which show that the Collette oxygen-scavenging layer is activated before the plastic container is filled with product. The underlining in the citations was added by Applicants.

Summary, Paragraph 4, Sentence 2: "The masterbatch preparation takes place in a moisture and oxygen protected environment to prevent premature activation of the oxygen scavenger; similarly, the first blend preparation takes place in a controlled environment to prevent depletion of the oxygen scavenging effect (following activation)."

Summary, Paragraph 5, Sentences 2-4: "In contrast, before the container is filled, the first polymer [of the inner layer] prevents transmission of oxygen to the core layer, thus preventing depletion of the oxygen scavenging effect. An outer layer of the same first polymer (or another high-oxygen barrier polymer) retards the ingress and egress of oxygen, in both the filled and unfilled containers. Thus, this packaging structure provides both the reduced oxygen transmission required during unfilled storage, and the increased oxygen transmission through the inner layer following product filling."

Col. 6, lines 50-54: "Prior to activation, the focus will mainly be on keeping the product from becoming activated. After activation, the focus is on filling the package while the package still retains a high percentage of its oxygen scavenging power."

Col. 7, lines 24-28: "The unfilled bottles will have a definite shelf life to maintain effectiveness of the scavenging capacity. The shelf-life can be extended using a combination of: refrigeration, desiccation, storing in a modified atmosphere environment, and sealing in a high-barrier container, such as a bag or box."

Col. 8, lines 57-62: "In an initial unfilled state, the five-layer container sidewall provides a high barrier to oxygen transmission based on the two intermediate EVOH layers, which essentially protect the central oxygen scavenging core layer from depletion prior to product filling."

Claim 19 [same as originally filed claim 26 – the loan independent method claim] A method of making a preform for expansion into a hollow plastic container body, the preform having a multilayer body-forming portion including a core layer surrounded by inner and outer layers, the method comprising the steps of:

preparing a masterbatch comprising on the order of 50-90% polyethylene terephthalate (PET) and on the order of 10-50% oxygen scavenger by total weight of the masterbatch, the oxygen scavenger being an oxidizable organic polymer and a metal catalyst and the masterbatch being prepared in a moisture and oxygen protected environment to prevent premature activation of the oxygen scavenger;

preparing a first blend including on the order of 1-10% masterbatch and on the order of 90-99% polyethylene terephthalate component by total weight of the core layer, the polyethylene terephthalate component including at least on the order of 50% post consumer PET (PC-PET), the first blend being prepared in a moisture and oxygen protected environment to prevent depletion of the oxygen scavenger; and

forming a perform having a core layer of the first blend, and inner and outer layers of one or more barrier polymers which retard migration of the oxygen scavenger and its byproducts.

APPENDIX "B"

The Office Action at pages 7, 9, 11, 14, and 16 cites Collette at 7:24-33, 7:59-63, and 8:46-51 as disclosing a plastic container having a barrier layer with an oxygen scavenging property that is activated after the container is filled with an aqueous fluid. A subset of these passages (specifically, 7:32 and 7:61) is also cited by the Office Action in support of the assertion that Collette teaches forming hot-fill containers that include heat-activated catalysts which would activate during product filling. When read in context of the document as a whole, the aforementioned passages do not support the assertion that Collette discloses a method for producing a plastic container having an oxygen scavenging layer that is activated after product filling. Each of the cited passages are addressed in order below:

- This passage describes that the unfilled containers of Collette will have a definite shelf life in terms of scavenging capacity and describes measures (e.g., storage under a modified atmosphere, refrigeration, desiccation, etc.) for extending the shelf life of the container -- presumably by avoiding depletion of the activated scavenging layer prior to use. The disclosure at 7:24-28 is consistent with a container having a scavenger layer that is not stable during unfilled storage and is inherently activated before filling.
- This passage generically states that "additional care" is required for catalysts that are activated at room temperature in an oxygenated environment, without explaining at which stage of production the additional care is required. Based on the disclosure preceding this passage at 6:55-7:16, it would appear that the additional care is related to the handling of the catalyst feedstock and/or the catalyst-containing masterbatch prior to formation of the first blend (which is ultimately used to form the scavenger layer).
- This passage describes the "hot fill" bottle shown in Figs. 6 and 7. Hot-fill bottles are a type of container used in the packaging industry to accommodate packaging of food or beverage products having an elevated temperature. It is

irrelevant whether the containers of Collette are "hot-fill" since the barrier layer of the Collette container is already activated prior to product filling. Whether the catalyst of the Collette barrier layer is activated by heat or water is also irrelevant since there is no disclosure in Collette of any method for forming a container having a barrier layer that is not activated prior to filling.

- When read in its full context (i.e., 8:46-9:10), this passage refers to a container having an oxygen-scavenging layer that is activated before filling. Based on the disclosure at 8:57-62, it is clear that the EVOH shielding layers are used to prevent oxygen from reaching the already-activated scavenger layer during unfilled storage, thereby preventing depletion of the scavenging capacity of the activated scavenging layer prior to filling. Upon filling, the oxygen barrier properties of the inner EVOH shielding layer decreases, thereby allowing oxygen entrapped in the filled container to permeate through the inner EVOH layer and reach the activated scavenging layer.[18]

[18] See, e.g., col. 9, lines 2-8.